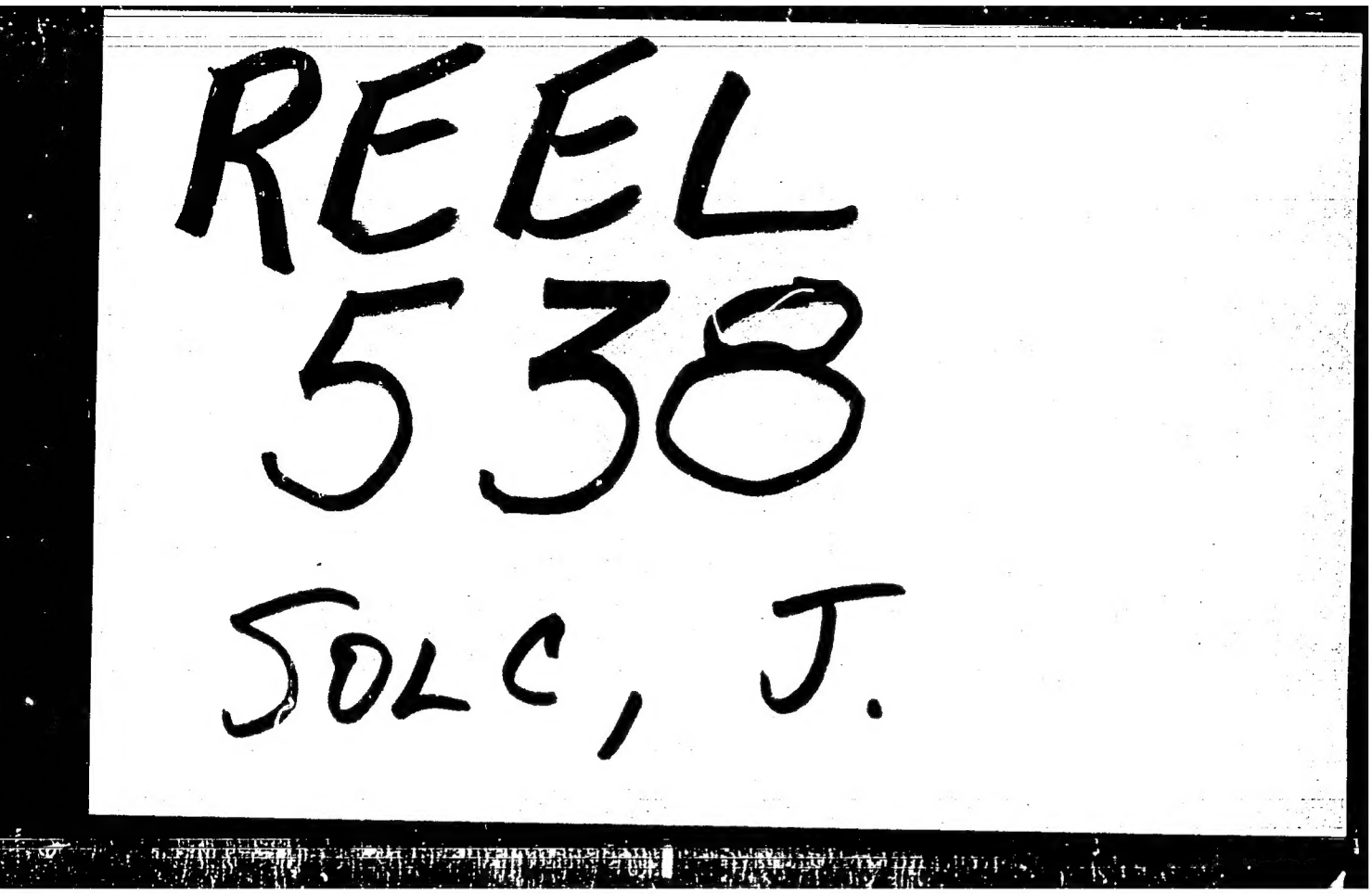

CZECH/34-59-4-3/18

AUTHORS: Hýbek, K., Ing., Šolc, J., Ing. and Zezulová, M., Ing.

TITLE: Economical Cr-Mn-Ni-N Alloy Austenitic Stainless Steels (Úsporné austenitické nerezavějící ocele Cr-Mn-Ni-N)

PERIODICAL: Hutnické Listy, 1959, Nr 4, pp 287 - 297 (Czechoslovakia)

ABSTRACT: On the basis of literary data, two laboratory series of melts of Cr-Mn-Ni-N steels were produced. The results obtained with the steels from the first laboratory series of melts were not encouraging enough to recommend use of such steel as an equivalent substitute for Cr-Ni steel. By evaluating the results of ten 100 kg laboratory melts and supplementing these with information gained on the influence of the quantity of nitrogen on the structure from tests with 10 kg melts, the authors have worked out the following recommendation for the chemical composition: max 0.12% C, 8-10% Mn, max 0.60% Si, 17-19% Cr, 4.0-5.0% Ni, 0.20-0.30% N, max 0.035% S, max 0.035% P. According to this recommendation, two 3-ton heats were produced under shop conditions and these confirmed the correctness of the assumptions made by the authors. The produced steel had a stable austenitic structure not only at normal

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CZECH/34-59-4-3/18

Economical Cr-Mn-Ni-N Alloy Austenitic Stainless Steels

that it is a promising substitute for ordinary Cr-Ni steels in various branches of industry, for instance, the building industry, automobile and aircraft industries, etc. There are 18 figures, 7 tables and 18 references, 4 of which are German, 9 English and 5 Czechoslovakian.

ASSOCIATION: Výzkumný ústav hutnictví železa, Praha
(Ferrous Metallurgy Research Institute, Prague)

SUBMITTED: January 9, 1959

Card 3/3

PHASE I BOOK EXPLOITATION SOV/5799

Unksov, Ye.P., Doctor of Technical Sciences, Professor, Ed.

Sovremennoye sostoyaniye kuznechno-shtampovochnogo proizvodstva (Present State of the Pressworking of Metals) [Moscow] Mashgiz, 1961. 434 p. 5000 copies printed.

Ed. of Publishing House: A.I. Sirotin; Tech. Ed.: D.I. Model'; Managing Ed. for Literature on the Hot Working of Metals: S.Ya. Golovin, Engineer.

Title: Kuznechno-shtampovochnoye proizvodstvo v SSSR (The Pressworking of Metals in the USSR) by: A.V. Altykis, D.I. Berezhkovskiy, V.F. Volkovitskiy, I.I. Girsh (deceased), L.D. Gol'man, S.P. Granovskiy, N.S. Dobrinskiy, A.I. Zimin, S. L. Zlotnikov, A.I. Kagalovskiy, P.V. Lobachev, V.N. Martynov, Ye.N. Moshnin, G.A. Navrotskiy, Ya.N. Okhrimenko, G.N. Rovinskiy, Ye.A. Stosha, Yu.L. Rozhdestvenskiy, N.V. Tikhomirov, Ye.P. Unksov, V.F. Shcheglov, and L.A. Shofman; Eds: Ye.P. Unksov, Doctor of Technical Sciences, Professor, and B.V. Rozanov.

Title: Kuznechno-shtampovochnoye proizvodstvo v ChSSR (The Pressworking of Metals in the Czechoslovak SR) by: S. Burda, F. Hrazdil, F. Drastík, F. Zlatohlávek

Card 1/8

Present State of the (Cont.) SOV/5799

Z. Kejval', V. Krauz, F. Kupka, F. Nejer, K. Narvan, J. Novák, J. Odehnal, K. Paul, B. Sommer, M. Honz, J. Šustka, V. Šindelář, and J. Šolc; Eds.: A. Nejepsa and M. Vlk.

PURPOSE: This book is intended for engineers and scientific personnel concerned with the pressworking of metals.

COVERAGE: Published jointly by Mashgiz and SNTL, the book discusses the present state of the pressworking of metals in the USSR and the Czechoslovak Socialist Republic. Chapters were written by both Soviet and Czechoslovak writers. No personalities are mentioned. There are 129 references: 98 Soviet, 16 English, 8 German, 5 Czech, and 2 French.

TABLE OF CONTENTS:

PRESSWORKING IN THE USSR

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Card 5/8

Present State of the (Cont.) SOV/5799

Z/034/61/000/003/002/011
E073/E535

AUTHORS: Šolc, J., Engineer, Zezulová, M., Engineer and Zdeněk, Zd., Engineer

TITLE: Development of Non-ageing, Deep Drawing Steels for Heavy Duty Presslings

PERIODICAL: Hutnické listy, 1961, No.3, pp.159-168

TEXT: The problems of manufacturing deep drawing sheets for automobile bodies have been solved and a vanadium stabilized steel has been developed for this purpose (Refs. 1 and 2). At present VÚHŽ, jointly with SONP, Kladno is engaged in developing an ageing-resistant deep drawing steel of a higher strength and in this paper a part of the obtained results are published. Due to economic considerations and practical manufacturing considerations, it was decided to manufacture the experimental steel in an oxygen blast converter. Current production of steel in oxygen blast converters will be possible in Czechoslovakia only towards the end of the Third Five Year Plan period; however, the authors considered it advisable to verify the possibilities of manufacture of an experimental 5-ton unit and to determine the optimum chemical composition which would give the desired results. The specification for the

Card 1/4

chemical composition was worked out on the basis of the Austrian "Altank" steel manufactured by the firm Voest, the composition of which approaches most closely the desired composition, which was chosen so as to obtain a steel with a minimum strength of 36 and a maximum strength of 42 kg/mm^2. Thus, the chosen chemical composition is as follows: 0.10 to 0.12% C, 0.30 to 0.45% Mn, 0.05 to 0.10% Si, 0.07 to 0.10% Al, max.0.030% P, max.0.030% S. The range and method of forming was governed by the available equipment and also by the desire to manufacture material for practical pressing tests. The required shapes of the sheets did not allow cold rolling; therefore, the experimental material was manufactured primarily as hot rolled sheet and in this stage of the investigations cold rolling was done only to get some qualitative information. The steel was manufactured in a basic 5 m^3 converter lined with tar-dolomite refractory. The oxygen was fed in from the top through a water-cooled nozzle of 20 mm aperture diameter. Two heats were produced, both from open hearth pig, of a composition as given in Table 3:

results have shown that an oxygen blast converter is suitable for manufacturing high strength deep drawing steels which are resistant to ageing; a non-ageing steel with satisfactory mechanical properties was obtained. It is emphasized that the results are those of a single heat and have to be verified by further experiments. The problems cannot be considered fully solved and further experiments have to be made on cold rolled sheets. The mechanical properties of the tested material approached those determined for the Austrian steel "Altank", which was included in the experiments for the purpose of comparison.
There are 21 figures, 9 tables and 9 references: 4 Czech and 5 non-Czech.

ASSOCIATIONS: VUHZ, Prague (Šolc and Zezulová) and SONP, Kladno (Zdeněk)

SUBMITTED: November 18, 1960

Table 3

	C	Mn	Si	P	S
			in %		
K 228	3.68	1.60	0.94	0.208	0.074
K 229	3.68	1.68	0.69	0.176	0.086

The produced steel was then used for rolling 1.5, 2, 2.5 and 3 mm thick sheets. These were subjected to metallographic investigation, aimed primarily at determining the grain size, with comparative investigations made on specimens of the Austrian steel "Altank". Furthermore, the produced sheets were used for determining the mechanical properties after various heat treatment conditions. Finally, practical tests were made with the experimental sheets to establish their deep drawing behaviour. The sheets were used experimentally for manufacturing pressed automobile body parts for which the scrap rate under normal manufacturing conditions is highest. A few photographs of such drawn components are included. Wherever possible foreign manufactured sheet was also included in the experiments for the purpose of comparison. The

Z/034/61/000/005/005/010
E073/E535

18.5100

AUTHOR: Šolc, J.

TITLE: Determination of the appropriate technology of cold rolling of 1000 mm wide strip

PERIODICAL: Hutnické listy, 1961, No.5, p.362

TEXT: The research report deals with the cold rolling technology of strips from all the applicable high grade steels listed in the Czechoslovak standard specifications. About 100 types of steel have been analysed. The report is based on published data and also on knowledge gained from all the Czechoslovak plants who cold roll strip or produce and heat treat the particular steels. The report deals with the properties of hot and cold rolled strip, the basic and intermediate heat treatment, and heat treatment of cold rolled strip and also with the rolling and surface treatment of strip. In a short summary, up-to-date manufacturing equipment is described, recommending a technology, and also manufacturing specifications applicable to the enumerated equipment. Thereby, the assumed quantity to be manufactured and strip dimensions are taken into consideration. A separate part

/B

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89417
Z/032/61/011/004/002/004
E073 'E335

18.1130

AUTHORS: Hýbek, K., Šolc, J. and Zezulová, M., Engineers

TITLE: State of Development of CrMnNiN-type Austenitic Economy Steels

PERIODICAL: Strojírenství, 1961, Vol. 11, No. 4, pp. 275 - 282

TEXT: The main aim of development of economy steels of this type was to save or completely substitute Ni. A break-through was achieved only after combining successfully the use of Mn with N. The combined used of these two elements enabled developing CrMnNiN steels which are suitable as a replacement for unstabilised CrNi steel (ČSN 17 241). Steels of this type are the US steels AISI 201 and 202 and the CrMnN steel described in an article in the 1958, No. 8, issue of this journal, which has so far not been included in the Czech standard specifications. In this paper the results are described of the development of economy austenitic steels which were achieved at VÚHZ with the cooperation of VŽKG and TZ VŘSR Stalingrad Works. The problem was investigated independently

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Z/032/61/011/004/002/004
E073/E335

State of Development ...

by K. Protiva (Ref. 4 - Hutník, 1959, Vol.9, No. 12, pp. 396-399) (SONP, Kladno) in cooperation with SVÚMT, Prague (Ref. 6 - B. Potůček: Economy Stainless CrNiMnN austenitic Steels MTS - Technical Report 201, Prague, 1960). The results are described only briefly, except for the properties of the steel and the experience gained during fabrication, which are described in greater detail. In preliminary experiments it was established that the chemical composition for production heats should be as follows: max. 0.12% C; 8-10% Mn; 17-19% Cr; 4-5% Ni; max. 0.035% S; max. 0.035% P and 0.20-0.30% N. Two 3-ton heats were produced, one with a Ni content at the lower limit, the other at the higher limit. That the metallurgical process was satisfactory was proved by the process of casting and solidification during which the steel was not effervescent. That the correct forming technology was used was proved by the fact that for the selected sheet thicknesses of 1 and 2.4 mm the surface of the sheets was perfect. Thereby, the fact that the

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State of Development ....

austenitic structure was stable even at higher forming temperatures was of great help. Metallographic tests showed that steel from both heats had a purely austenitic structure, both in the as-rolled state as well as after austenisation annealing at 1 030 to 1 050 °C, the optimum austenisation temperature being 1 000 to 1 100 °C. Even at the higher limit there was no grain coarsening. Corrosion tests gave good results and therefore this steel is recommended for consumer goods, i.e. kitchenware, dairy equipment and other food-industry applications as well as for components which are exposed to severe atmospheric conditions (for instance, railway carriages). The results of the mechanical tests are summarised in Tables 2, 3, 4 and 5. Table 2 gives the mechanical properties of 9 sheets from both heats, taken at random; the further tables indicate the effect of heat-treatment. The developed steel is fully equivalent to similar foreign steel and is superior as regards ductility. Weldability in the case of oxyacetylene, arc and argon-arc welding is good. The machineability is classified as 11b. It is particularly favourable to

State of Development ...

machine this material at elevated temperatures. However, the steel has to be protected against work hardening by pressure, bending, etc; if these peculiarities are taken into consideration, no difficulty will arise in machining this steel. The steel can be very satisfactorily polished both mechanically and by electrolytic methods. The forming properties are very good. In experiments with good-quality equipment reduction in the cold state of up to 90% without intermediate annealing was achieved, which means that from a sheet of 2.5 mm thickness a sheet of only 0.25 mm can be produced without intermediate annealing. Deep-drawing tests in producing pots and other kitchenware and also plates of a pasteurising column showed that the steel had very good forming properties. No difficulties arose in cutting, rolling, austenisation annealing, grinding and polishing of products from this steel. The main advantage of the recently developed CrMnNiN economy steel is the fact that its introduction into industry does not require any considerable change compared with the manufacture of current types of stainless steels, although slight changes

Card 4/12

State of Development ....

in technology will be required in view of the higher strength values of this steel. From the technological point of view, the steel will also have a number of advantages. It was confirmed experimentally that the austenitic structure remained stable up to 1 260 °C, even if the Ni content was at the lowest limit. If the content of the austenite-forming elements was at the upper limit no two-phase structure developed even after two hours heating at 1 300 °C. On exceeding the austenisation temperature, for which the range 1 030 to 1 050 °C/min/air (the time was determined for sheet) was chosen in view of the increased tendency to scale-formation for steels containing Mn, no undesirable change in the mechanical properties (particularly in the decisive property of elongation) occurred at temperatures up to 1 100 °C. Certain properties of this new steel justify the assumption that in many cases it will be not only a good substitute for the steel ČSN 17 241 and 17 242 but for certain applications it will even be superior to these steels. For instance, the higher strength values will enable maintaining a higher

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State of Development ....

polish and a better resistance to abrasive wear. Furthermore, the higher strength of the material will enable reducing the weight by using thinner and lighter sheets. On the other hand, due to the higher strength values, manual forming operations of thicker sheets will be more difficult. The results of tests of the influence of cold-forming indicate an entirely new and wide field of application for these steels as a material for substituting special hardenable austenitic steels. Introduction of this stainless economy steel with only half the usual nickel content as compared with current types of CrNi steel is of very considerable economic importance. This steel is now being manufactured by SONP, Kladno and VŽKG, Ostrava, and the Trinecké železárny VŘSR (Trinec Irons works VŘSR) also intend to start manufacturing this steel. A specification is being drafted for the manufacture of a CrMnNiN steel (CSN 17 460), with the following proposed composition: max. 0.12% C, 7.5-10.5% Mn, max. 1.00% Si, 16.0-19.0% Cr, 4.0-6.0% Ni, 0.15%-0.30% N, max. 0.060% P and max. 0.035% S.

89417
Z/032/61/011/004/002/004
E073/E335

State of Developmen[illegible] ....

There are 9 figures, 5 tables and 6 references: 5 Czech and 1 non-Czech.

ASSOCIATION: Výzkumný ústav hutnictví železa, Praha
(Research Institute for Ferrous Metals, Prague)

(Abstractor's note: key to Tables 3, 4 and 5 on card 12/12)

Card 7/12

SOLC, Juraj, inz., CSc.; PALKA, Milan, inz.

Load tests of an anchored V-shaped supporting pillar for 400 kv lines. Energetika Cz 14 no.2:60-62 F'64

1. Slovenska vysoka skola technicka, Bratislava (for Solc).
2. Elektrovod, n.p., Bratislava (for Palka).

SOLC, Jan, inz.; STANKA, Karel, inz. dr.

Conditions of the research and production of tools for extrusion of nonferrous metals in Czechoslovakia. Hut listy 19 no.5:337-349 My '64

1. Research Institute of Iron Metallurgy, Prague.

[illegible], [illegible].

Unification of the chemical, radiochemical, biologic, and microbiologic methods of water analysis in the member states of the Council for Mutual Economic Assistance. Vodni hosp 15 no.2:54 '65.

L 62722-65 EWP(h)/EWP(l)

ACCESSION NR: AP5021464 CZ/0034/64/000/011/0833/0833

15
0

AUTHOR: Pinc, J.; Solc, J. (Engineer)

44 55 44 55

TITLE: Apparatus for turning over of flat objects, such as metal sheets, belts, and plates

44 55 14

SOURCE: Hutnicke listy, no. 11, 1964, 833

TOPIC TAGS: metallurgic machinery

ABSTRACT: The article describes Czechoslovak Patent Application Class 7a, 25, PV 6901-63, dated 14th. December 1963. The apparatus consists of jointed levers and is suitable for use in metallurgical plants and welding workshops. Orig. art. has 1 figure.

ASSOCIATION: none

SUBMITTED: 14Dec63 ENCL: 00 SUB CODE: IE

NO REF SOV: 000 OTHER: 000 JPRS

Card 1/1 hp

L 10491-66 EC
ACC NR: AP6003540 SOURCE CODE: CZ/0030/65/000/001/0029/0032

AUTHOR: Solc, J. (Engineer, Candidate of sciences)

ORG: Department of Geodesy SVST (Katedra geodezie SVST)

TITLE: Accuracy of staff section reading with a cross-wire range-finder

SOURCE: Jemna mechanika a optika, no.1, 1965, 29-32

TOPIC TAGS: geodetic instrument, geodesy

ABSTRACT: A relation is derived for the accuracy of readings. According to the author the most suitable relation is a linear function. The equation of adjustment is derived empirically. Orig. art. has: 6 figures and 16 formulas. [JPRS]

SUB CODE: 08 / SUBM DATE: 10Sep64 / ORIG REF: 003 / OTH REF: 005

Card 1/1 UDC: 528.514

SOLC, J.; SOLC, J.

Experience with film dosimeters. Cesk. radiol. 19 no.6:415-418 D '65.

1. Rentgenologicke oddeleni nemocnice v Semilech; Dioptra, n.p., Turnov.

L 34469-66

ACC NR: AP6026242 SOURCE CODE: CZ/0024/65/000/007/0173/0175

AUTHOR: Solc, Juraj (Engineer; Candidate of sciences)

ORG: Department of Geodesy, SVST, Bratislava (Katedra geodezie SVST)

TITLE: Error of the multiplication constant of a wire telemeter

SOURCE: Geodeticky a kartograficky obzor, no. 7, 1965, 173-175

TOPIC TAGS: telemetry equipment, theodolite

ABSTRACT: The article reports the results of tests of 20 new theodolites to determine the difference between the rated and actual values of the multiplication constant. Significant differences were found. The need to check each new telemeter before using it for measurements is pointed out. This paper was presented by Engineer, Doctor Karel Kucera, VUGTK, Prague. Orig. art. has: 3 figures, 8 formulas and 2 tables. [JPRS: 32,859]

SUB CODE: 08, 09 / SUBM DATE: none / ORIG REF: 004 / SOV REF: 001
OTH REF: 003

Card 1/1

UDC: 528.088.22:531.719.24

SOLC, J., MUDr.

Deficiencies in selection of patients for the treatment in state-owned spas. Cesk. zdravot. 4 no.10:599-603 Oct 56.

1. Ministerstvo zdravotnictvi, hlavni sprava odb. lec. vistavu lazni a zridel.
(BALNEOLOGY,
selection of patients in state-owned spas in Czech. (Cz))

PISAROVA, M.; MACHULA, Fr.; SOLC, J.

Neurological sequelae of severe diarrheas in infants. Cesk. pediat. 17 no.10:874-880 O '62.

1. Neurologicka klikika lekarske fakulty Karlovy university v Plzni, prednosta prof. dr. V. Pitha Detska klinika lekarske fakulty Karlovy university v Plzni, prednosta doc. dr. J. Lukes.
(DIARRHEA INFANTILE) (PARALYSIS) (HYDROCEPHALUS)

SOLC, J.

"Automatic sharpening in reproduction dark-rooms." Technicka Praca, Bratislava, Vol. 6, No. 1, Jan. 1954, p. 54.

SO: Eastern European Accessions List, Vol. 3, No. 11, Nov. 1954, L.C.

Solc J.

CZECHOSLOVAKIA/Optics - Optical Technology K-4

Abs Jour : Ref Zhur - Fizika, No 5, 1958, No 11659

Author : Solc J.
Inst : Higher Institute for Minerals, Tarnuv, Czechoslovakia
Title : Increase of Contrast in Microscopes

Orig Pub : Jemna mech. a opt., 1956, 1, No 4, 125-126

Abstract : Description of a principle of a new device for increasing the contrast in microscopes. In the rear focus of the microobjective is installed a plate direct light and passes the light diffracted by the microscopic objectives through ring-like differently colored bands.

Card : 1/1

SOLC, J.

"Hungarian optical plants."

JEMNA MECHANIKA A OPTIKA. Praha, Czechoslovakia, Vol. 4, February, 1959.

Monthly List of East European Accessions(EEAI), LC, Vol. 8, No. 8, September 1959.
Unclas.

SOLC, Juraj, inz.

The test of precision and economy of coordination nonogram.
Geod kart obzor 2 no.3:45-48 Mr '56.

1. Slovenska vysoka skola technicka, Bra' slava.

PALKA, Milan, inz.; SOLC, Juraj, inz.

Construction of electric lines in high mountains. Geod kart obzor 8 no.2:33-35 F '62.

1. Elektrovod, n.p., Bratislava (for Palka). 2. Katedra geodezie, Slovenska vysoka skola technicka, Bratislava (for Sloc).

BOJSA, Miroslav; KOHUT, Frantisek, ins.; SOLC, Juraj, ins.

Mechanical tests of a new pole for extra-high-voltage lines.
Energetika Cz 12 no.12:646-647 D '62.

SOLC, J.; Technicka spoluprace: KRAFTOVA, I.

Excretion of ketone bodies in the urine of children. Cesk. pediat 18 no.6:481-486 Je '63.

1. Detska klinika lekarske fakulty KU v Plzni, prednosta doc. dr. J. Lukes.

(KETONE BODIES) (URINE)

SOLC, J.; KRAFTOVA, I., technicka spoluprace; KOSTKOVA, E., technicka spoluprace.

Ketosis in fasting in children. Cesk pediat 18 no. 3:220-227 '63.

1. Detska klinika lekarske fakulty KU v Plzni, prednosta doc. dr. J. Lukes.
(FASTING) (BLOOD SUGAR) (RESPIRATORY FUNCTION TESTS)
(FATTY ACIDS) (ICE TONE BODIES) (ACIDOSIS)

SOLC, J.

Seminar on model technology. Chem prum 14 no.1:48 Ja'64.

1. Moravske chemicke zavody, n.p.

SOLC, J. Technicka spoluprace: KRAFTOVA, I.

Ketosis in febrile disease. I. Glycemia, pyruvic, acid, lactic acid, alphaglutaric acid, nonesterified fatty acids and ketonemia in fever. Cesk. pediat. 19 no.7:577-584 Jl'64

1. Detska klinika lekarske fakulty KU [Karlovay university] v Plzni; prednosta: doc. dr. J.Lukes.

SOLC, J.; JOZIFEK, A.; SOLC, Ivan

Simple evaluation of film X-ray dosimeters. Jemna mech opt 9 no.4:120 '64.

ACCESSION NR: AP4035364 Z/0034/64/000/005/0337/0349

AUTHOR: Solc, Jan (Engineer)(Shol'ts, I.); Stanka, Karel (Doctor of engineering) (Stan'ka K.)

TITLE: The situation in the manufacture and testing of tools for extruding nonferrous metals in the Czechoslovak SSR

SOURCE: Hutnicke listy, no. 5, 1964, 337-349

TOPIC TAGS: extruder, durability, stellite, extruder lining, hard alloy, ceramic, vertical press, horizontal press, articulated profile

ABSTRACT: The article discusses the prime importance of the durability of extruders, and three basic ways of prolonging their life; new materials and their working; the advantages and disadvantages of stellites; extruder linings of hard alloys and ceramic materials; the success of the Cr_3C_2 type hard alloys; and problems of extruders for articulated profiles. Separate sections deal with: the stresses on the different parts of extruders; the choice of materials for them; extruders with 1) conical plunger, 2) for vertical tube presses, with usually six alternating extruders, 3) for horizontal presses, 4) with ceramic linings.

Card 1/2

ACCESSION NR: AP4035364

5) for articulated profiles. The authors discuss at considerable length the results of practical shop tests of foreign and Czechoslovak material. Orig. art. has: 15 figures and 14 tables.

ASSOCIATION: Vyzkumny ustav hutnictvi zeleza, Prague (Experimental Institute for Ferrous Metallurgy)

SUBMITTED: 00 DATE ACQ: 20May64 ENCL: 00

SUB CODE: MM NO REF SOV: 001 OTHER: 007

Card 2/2

SOLC,J.; BERKA,J.; TOMICEK,J.

Pressure syringe for angiography. Cesk. rentgen. 18 no.3: 214-215 My'64

1. Rentgenologicke oddeleni nemocnice v Semilech; Technometra, n.p. v Semilech.

*

[redacted], Josef, akad. arch.

Technical and economic conference of the Fasadostav National Enterprise, Prague, on the remodeling and modernization of dwelling houses. Poz stavby 13 no.1:41 '65.

SOLC, Josef, akad. arch.

"Reconstruction and remodeling of buildings" by R.Nestan.
Reviewed by Josef Solc. Poz stavby 13 no.3:126 '65.

SOLC, K

Z/008/60/000/02/014/015
E034/E416

AUTHORS: Jaroslav Nývlt and Karel Šolc

TITLE: Theory of Non-Electrolyte Solutions. \ Low Molecular Solutions

PERIODICAL: Chemické listy, 1960, Nr 2, pp 171-216

ABSTRACT: This long review is arranged as follows: Introduction (p 171) (Ref 335,7,336,92,153,229,230, 236,275,74,102,60,96,336,148,110,275,245,346,82,58,18,97, 74,75,154,220,109,277,207,118,120,148,60,158,334,254,95, 124,125,26,336,237,85,329,304,344,151,117,270).
1. Intermolecular forces (p 173): The structure and properties of solutions are a result of intermolecular forces in liquids which depend on the form and intensity of strong particle fields. The fields are formed either by strong attraction or strong repulsion. Both are dealt with. Forces of attraction: (Ref 336,209,210,95, 154,174) - Orientation effect: Eq (1.1) and Ref 166 to 168. Induction effect: Eq (1.2) and Ref 63,64,80. Dispersion effect: Eq (1.3) and Ref 209 to 213,192,154, 219. Forces of repulsion: Eq (1.4) and (1.5) and

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Z/008/60/000/02/014/015
E034/416

Theory of Non-Electrolyte Solutions. Low Molecular Solutions

Ref 336,44,131,328,140,243,145,212,142,54,240,241,307, 355. Complete potential functions: Eq (1.6) to (1.26) and Ref 154,278,200 to 203,188,324,341,336,111,170,297, 154,18,127,47,340,9,10,114,242,217,352,156,327,246. Fig 1: Rigid sphere model. Fig 2: Point centre repulsion model; Fig 3: Right-angle potential. Fig 4: Sutherland potential. Fig 5: Lennard-Jones potential. Fig 6: Original Buckingham potential. Fig 7: Corrected Buckingham potential.
2. Thermodynamic description of solutions (p 178): Eq (2.1) to (2.17) and Ref 248,277,95,148,95,73,124.
2.1 Ideal solutions (p 180): Eq (2.18) to (2.28) and Ref 206,207,254,287,358,157,205,70,119,122.
2.2 Non-ideal solutions: Eq (2.29) to (2.47) and Ref 204,158,73,124 to 126,288 to 290,336,95,318,206, 315,319,133,148,267,50,221,195,197,118,228,225,304,119, 121,123,365. Fig 8: Graphic determination of partial molar volumes of dimensions $\overline{AC} = \overline{X}_2$, $\overline{BD} = \overline{X}_1$.

Card 2/11 Fig 9: Concentration dependence of additive function

Theory of Non-Electrolyte Solutions. Low Molecular Solutions

for benzene-cyclohexane mixtures. Fig 10: Concentration dependence of additive function for benzene-methanol mixtures. Fig 11: Concentration dependence of additive function for chloroform-ethanol-mixtures.
3. Thermodynamic theory of solutions.
3.1 Dolezalek chemical theory (p 183): Eq (3.1) to (3.4) and Ref 65,247,148,66,148,357,336,137,148,81,343.
3.2 Physical theory (p 184): Eq (3.5) to (3.14) and Ref 350,85,95,336,351,28,29,146,194 to 198,33,148,199,148.
3.3 Theory of regular solutions (p 185): Eq (3.15) to (3.42) and Ref 138,139,141,143,145,148,149,322,346,316, 317,68,315,319,32,367,5,6,330,331,258,321,95,2,360, 33,148,69,326,366.
4. Structure and statistical description of liquids (p 188): Ref 335,336,190,336,103,67,190,95,61,62,169, 239,368,145,27. Fig 12: Typical curves for X-ray scattering. (a) gaseous state of aggregation; (b) liquid state of aggregation; (c) crystalline substances. Statistical description of set of particles - partition function (p 189). Eq (4.1) to (4.23) and

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Ref 275,37,336,260,93,110,346,336,84,48.
5. Theorem of corresponding states (p 191).
Eq (5.1) to (5.6) and Ref 261,262,148,263,293,362,158,298.
6. Theory of conformal solutions (p 192): Eq (6.1) to (6.12) and Ref 214,46,56,336,275,45,295,216,215,12.
7. Lattice theory of solutions (p 193). Ref 148.
7.1 Theory of one dimensional solutions: Ref 89,132, 173,171,281,282,347,116,160,187,337.
7.2 Rigorously regular solutions: Eq (7.1) to (7.5) and Ref 336,71,346,110,148,106,120,104,106,110,320. (a) Null approximation: Eq (7.6) to (7.12) and Ref 107,110,104, 107,129,198,267. (b) Quasichemical manipulation (first approximation) and Bethe's method (Ref 110): Eq (7.13) to (7.21) and Ref 250,110,104,303,30,105,257,325. (c) Higher approximations and Kirkwood's method of moments: Eq (7.22) to (7.26) and Ref 110,112,113,180, 306,31,52,180,353,14,134,135,136,159,171,172,191,193, 256,356,57,115,108,162 to 164. (d) Effect of molecular orientation: Ref 345,252,13,15,16,21,22,336.
Card 4/11 7.3 Cellular theory (p 197): Eq (7.28) to (7.54) and

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Ref 291,89,101,201,325,18,51,275,77,78,202,17,19,59, 98,101,130,275,292,341,200,181,275,294,363,150,154, 278,359,203,34,299,226,227,279,283,285,295,145,218,148, 86 to 88,72,265,18,280,181,34,53,79,90,91,155,175,176, 235,255,259,299,339,354,36,55,99,20,4,173,276,338,266, 272,279,283,296,308,309,311 to 313. Fig 13: Scheme for derivation of potential energy in a cellular model. Fig 14: Scheme of cell for rigid sphere model.
8. Average potential model (p 202): Ref 274. Conde approximation: Eq (8.1) to (8.17) and Ref 275. Refined version: Eq (8.18) to (8.22) and Ref 275,272 to 274,322,189,223,224,253,269,24.
9. Molecular distribution function method (p 205): Eq (9.1) to (9.18) and Ref 244,38 to 41,98,100,151,152, 154,165,174,177,179,182 to 186,208,233,234,237,238,275, 301,302,305,314,332,185,35,314,48,310,1,161,
10. Globular molecules (p 207): Eq (10.1) to (10.3) and Ref 275,262,298,300,8,295,128,296,342,11,348,349,264, 349. Conclusion (p 208): The review is said to be an attempt to give a critical survey of the most important

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theories of solutions of low molecular non-polar non-electrolytes. The approach is historical dealing with the simplest theories first and finally with markedly complicated ones developed in the last few years. The review shows that the situation is unsatisfactory at present; this results from the complexity of the models of liquid solutions. Where the theory has been worked out, only the simplest molecules conform to theory (Ar, Ne, N_2, CO etc and in certain cases C_6H_6, cyclohexane, CCl_4 etc) - the more complicated systems are still interpreted on essentially a semi-empirical basis. In the mutual comparison of individual theories it is necessary to remember that the simplest theories, despite their semi-empirical character and insufficient molecular explanation of parameters have, on the whole, the greatest practical significance and, precisely because of their simplicity, are partially utilized in the correlation of experimental data and in the description of solution behaviour (except P-V-T relationships). On the other hand newer,

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more exact theories give a complete description of a system, including volume behaviour, with disproportionately better results. However, because of its complexity and mathematical difficulty it has been, so far, only occasionally used in practice. At the present time, it has more of a theoretical significance because it results in detailed relationships between macroscopic and molecular properties and not only allows description but explanation of the behaviour of solutions. Symbols used: a van der Waal's constant calculated for 1 mol; a' constant; A coefficient; b van der Waal's constant calculated for 1 mol; b constant; b distance from centre of molecule to centre of cell; b' constant; c molarity; c,c' constants; c_{rr} density of cohesive energy; d average distance from centre of two molecules; d geometrical parameter for globular molecule; e Euler number; E molar internal energy; f fugacity; f energy parameter of theory of conformal solutions; F molar free energy; g dimensional parameter in theory of conformal solutions; g_{lk} statistical weight;

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$g(\underline{r})$ radial distribution function; G molar free enthalpy; G_{rs} integral; $\underline{h}$ Planck constant; H molar enthalpy; i designation of molecules; I intensity of light rays; j designation of molecules; j constant for Lennard-Jones potential; $\underline{k}$ Boltzmann constant; k constant for Lennard-Jones potential; K_H Henry constant; K_r equilibrium constant of solvation; L length; m number of peripheral atoms of globular molecule; n number of moles; n exponent in repulsing term; $\underline{N}$ Avogadro number; N number of molecules; p thermodynamic probability; p_r vapour tension of r-th component above solution; p_r^o vapour tension of pure r-th component at same temperature; p pressure; p_{int} internal pressure; $p(h)(\underline{r}_1,\ldots,\underline{r}_N)$ specific distribution function; q_r effect molar volume; q_r partition function of molecular type r; Q molar partition function; r component designation; r distance; r^* length coordinate of minima of Lennard-Jones potential; $\underline{r}$ space coordinate; $\underline{R}$ gas constant;

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$R^{(h)}(\underline{r}_1,\ldots,\underline{r}_N)$ generic distribution function; s component designation; S molar entropy; T absolute temperature; u molecular potential energy; u^* energy coordinate of minima of Lennard-Jones potential; $\underline{u}(r)$ potential function; $\overline{u}(b)$ $z\overline{u}(b)$ = average potential energy of particle at distance b from the cell centre; U molar potential energy; v molecular volume (= V/N); v_f free volume; V molar volume; x space rectangular coordinate; x_r molar fraction of r-th component; X extensive dimension; X^+ apparent molar properties; X zX = number unhomogeneous pairs in lattice; y rectangular space coordinate; z rectangular space coordinate; z coordination number of lattice; z_r effective volume fraction; α polarizibility; α thermal expansibility; β parameter; β isothermal compressibility; γ geometric lattice factor; γ_r activity coefficient; Γ parameter; δ_r solubility parameter; ε energy parameter; ϵ Bethe parameter; ϑ angle; Θ energy parameter;

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Θ polar coordinate; λ wave length; λ_r absolute activity; μ dipole moment; μ_r chemical potential; ν_o basic frequency; Ξ large partition function; Π osmotic pressure; ϱ molecular dimensional parameter; $\varrho^{(h)}(\underline{r}_1,\ldots,\underline{r}_h)$ generic distribution function in large canonical set; σ average spherical molecular; φ_r volume fraction of r-th component; Φ universal reducer of partition functions; χ lattice potential energy allocated to one particle; Ψ universal potential function in the theorem of corresponding states; ω exchange energy; ∇ operator; X without index dimension concerned with solution; X_r concerned with pure r-th component; X_{ij} concerned with molecular pair i-j; X_o concerned with reference substances; $\overline{X}_r$ partial molar dimension; $\overline{X}$ eccentricity value; $\tilde{X}$ reductor parameter; $\langle X \rangle$ average interaction parameters or reduced dimensional in solution; X^M mixed function; X^E additive function; X^o in standard state; X^V evaporation value;

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SOLC,K.; ERDOS,E.

Absolute isothermal distillation method of determination of osmotic pressure. Coll Cz Chem 29 no.1:24-35 Ja'64

1. Institute of Macromolecular Chemistry and Institute of Physical Chemistry, Czechoslovak Academy of Sciences, Prague.

SOLC,K.

Analysis of the mechanism of isothermal distillation. Coll Cz Chem 29 no.1:36-55 Ja'64

1. Institute of Macromolecular Chemistry, Czechoslovak Academy of Sciences, Prague.

SOLC, I.

SOLC, L. Production of lard in the Polish People's Republic. p. 377. Vol. 7, no. 8, 1956. PRUMYSL POTRAVIN. Praha, Czechoslovakia.

SOURCE: East European Accessions List (EEAL) Vol. 6, No. 4--April 1957

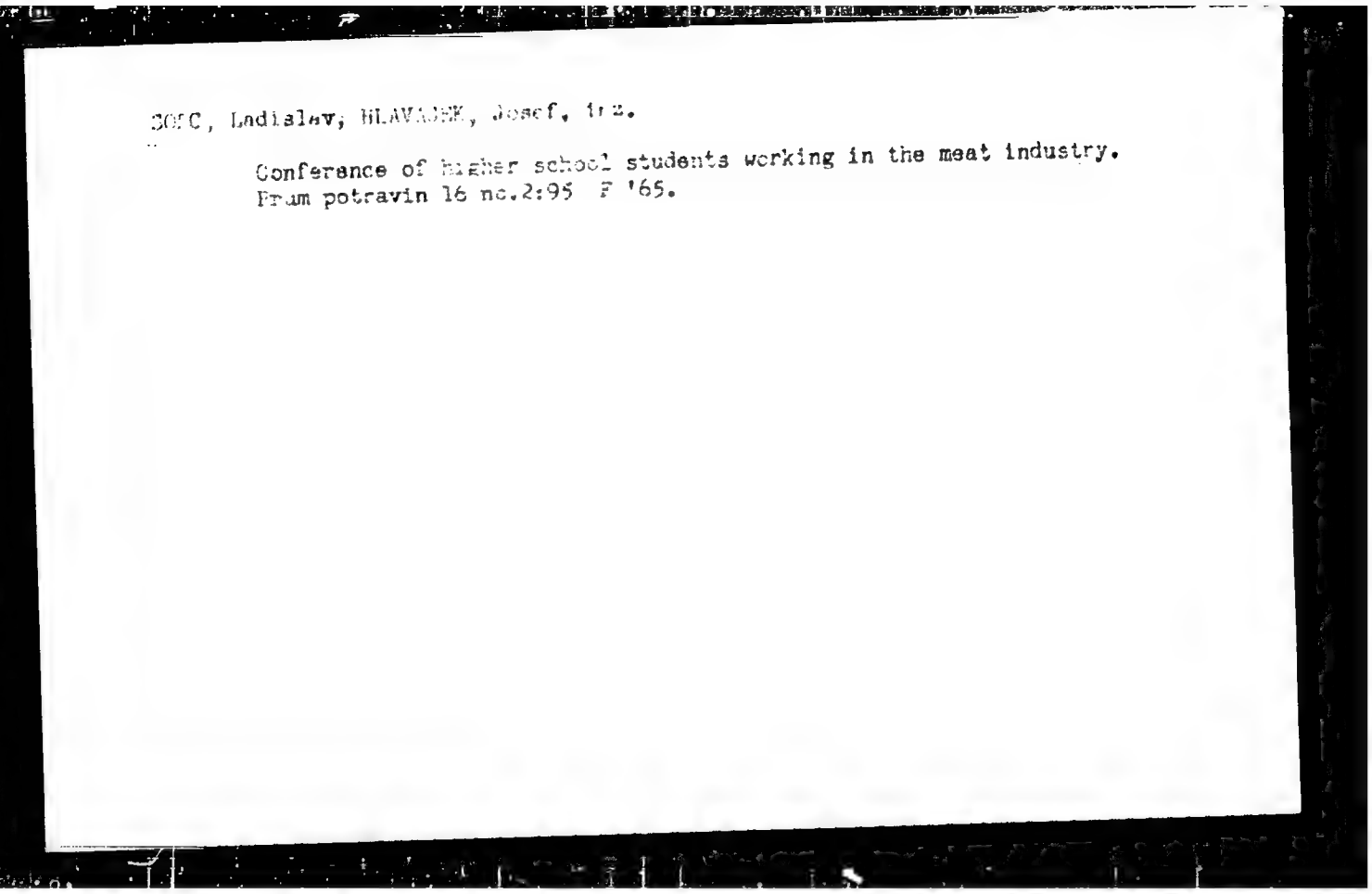
SOLC, L.

SCIENCE

Periodicals: CESKOSLOVENSKY CASOPIS PRO FYSIKU. Vol. 8, no. 6, 1958

SOLC, L. X-ray spectrograph for an exact control of the angle of crystal lattice planes. p. 739.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 5, May 1959, Unclass.



ZOFC, Ladislav; HLAVACEK, Josef, ing.

Conference of higher school students working in the meat industry.
Prum potravin 16 no.2:95 F '65.

SOLC, Libor

Rudnice and Kostalov-Kalna horizons in the Lower Krkonose area.
Cas min geol 9 no. 1:69-71 '64.

1. Geologicky pruzkum, Trutnov.

CZECHOSLOVAKIA

SOLC, L.

Geological Institute (Geologicky pruzkum), Trutnov

Prague, Casop.is pro mineralogii a geologii, No 1, 1964, pp 69-71

"The Rudnice and Kost'alov-Kalna Zones in the Krkonose Piedmont."

SOLC, L.

International [illegible] for testing water [illegible] ines. Poročila Litostroj. p. 149.

STROJNISKI VESTNIK. (Fakulteta za elektrotehniko in strojnistvo Univerze v Ljubljani, Institut za turbostroje v Ljubljani, Drustvo strojnih inzenirjev in tehnikov IP Slovenije in Strojna industrija Slovenije)
Ljubljana, Yugoslavia
Vol. 5, no. 4/5, Aug. 1959

Monthly list of Eastern European Accession Index (EEAI) LC vol. 8, No. 11
November 1959
Uncl.

SOLC, Leopold

Submerged bulb-type turbines for the Sava River. Stroj vest 6 no.1: 25-28 Ja '60. (EEAI 10:5)
(Slovenia--Turbines)

SOLC, Leopold

Submerged bulb-type turbines; from first ideas to newest realizations (To be contd.) Stroj vest 6 no.1:28-34 '60. (EEAI 10:5)
(Turbines)

SOLC, Leopold

Tubular turbines; from the first idea to the newest realizations. (To be contd.) Stroj vest 6 No.2:63-70 Mr '60. (EEAI 9:10)
(Turbines)

SOLC, Leopold

Tubular turbines; from the first idea to the newest realization. (Conclusion). Stroj vest 6 no.3:105-112 My '60. (EEAI 10:1)

1. Titovi zavodi "Litostroj."
(Turbines)

SOLE, Leopoldina Ines.

Role of engineers in the production of turbines. Stroj vest 9 no.1/2:38-40 Ap '63.

1. Litostroj, Ljubljana.

SOLC, Leopold, inz. projektant (Ljubljana, Dakoviceva 4/III)

Production of turbines in the Litostroj Works. Tehnika Jug 18 no.7:Supplement: Masinstvo 12 no.7:1292-1296a Jl'63.

1. Sef projektant za opremu hidroelektrana u "Litostroju", Ljubljana.

ŠIRA, Albert, prof. ing.; ŠOLA, Leopold, ing.

Feeding air into a suction pipe. Stroj vest 10 no. 1/2: 12-14 Ap '64.

1. Faculty of Machine Building, University of Ljubljana, Ljubljana (for Širna). 2. Mitostroj, Ljubljana (for Šola).

SOLC, M.

Non-stable process of anodic oxygen separation in platinum. Coll Cz Chem 26 no.7:1749-1755 Jl '61.

1. Institut fur anorganische Chemie, Tschechoslowakische Akademie der Wissenschaften, Prag.

(Platinum) (Oxygen)

ŠOLC, M.

Czechoslovakia

Institute for Anorganic Chemistry, Czechoslovak Academy of Sciences -- Prague

Collection of Czechoslovak Chemical Communications, No 11, 1962, pp 2621-2626

"Kinetics of the Hydration of Carbon Dioxyde to Methane on a Nickel-Chrom(III)-Oxyde Catalyst."

SOLC, M.; REGNER, A.

Poisoning of a nickel-chromium (III)-oxide catalyst by hydrogen sulfide. Coll Cz Chem 28 no.1:159-172 Ja '63.

1. Institut fur anorganische Chemie, Tschechoslowakische Akademie der Wissenschaften, Prag.

SOLC,M.: REGNER,A.

Poisoning of a nickel-chromium (III)-oxide catalyst by carbon disulfide. Coll Cz Chem 23 no.11:2849-2853 N'63.

1. Institut fur anorganische Chemie, Tschechoslowakische Akademie der Wissenschaften, Prag.

SOLC, Milos

Mechanism of nitric oxide oxidation to nitrogen dioxide. Chem listy 57 no.7:673-687 Jl '63.

1. Ustav anorganicke chemie, Ceskoslovenska akademie ved, Praha.

SOLC, M.; DUB, V.

Structure and texture of nickel-chromium (III)-oxide catalysts. Coll Cz Chem 29 no.4:857-862 Ap '64.

1. Institute of Inorganic Chemistry, Czechoslovak Academy of Sciences, Prague.

SOLC, M.

Contribution to the kinetics and mechanism of nitric oxide oxidation. Coll Cz Chem 29 no.9:2227-2230 S '64.

1. Institute of Inorganic Chemistry, Czechoslovak Academy of Sciences, Prague.

SOLC, Milan

Use of differential calorimetry in the study of reaction kinetics and mechanism in gaseous phase. Chem listy 58 no.5:509-516 My '64.

1. Institute of Inorganic Chemistry, Czechoslovak Academy of Sciences, Prague.

CZECHOSLOVAKIA

SOLC, M.

Institute for Inorganic Chemistry, Czechoslovakian Academy of Sciences, Prague.

Prague, Collection of Czechoslovak Chemical Communications, No 11, November 1965, pp 3798-3803.

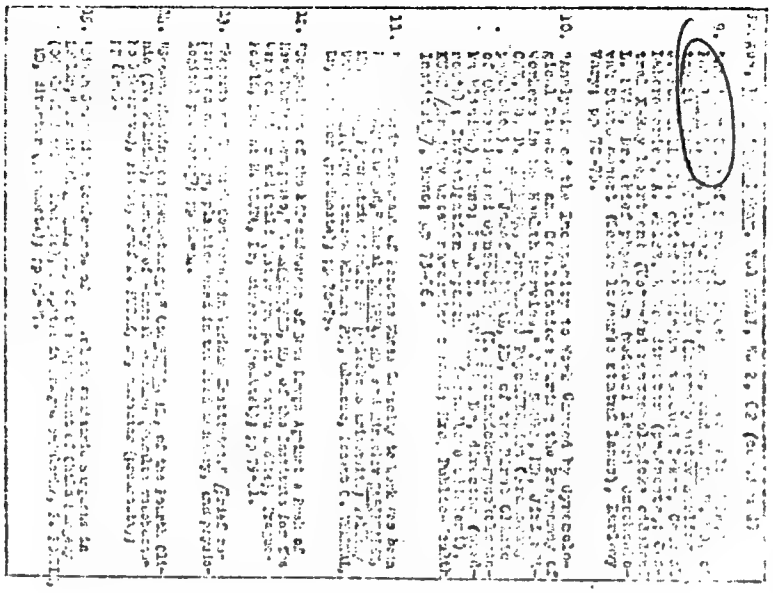
"Possibility of the elementary course of the reaction of nitric oxide with oxygen."

OSLO, M.

Kinetics of reaction of nitric oxide with oxygen. Pt.1.
Coll Cz Chem 30 no.1:257-264 Ja '65.

1, Institut fur anorganische Chemie, Tschechoslowakische Akademie der Wissenschaften, Prague. Submitted March 19, 1964.

SOLC, PHIEL



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Prague, Casopis Lekaru Ceskych, Vol 104, No 34, 27 Aug 65, pp 849 - 853

Abstract [Authors' English summary modified]: Occurrences of milk intolerance related to the occurrence of bitter regurgitation, and the frequency of [illegible] of 218 healthy university students is discussed. 2 Figures, 1 Table, 13 Western, 4 Czech references. (Manuscript received Nov 65).

1/1

SOLC, P.; MOKRY, Z.; Nursing Home (Lecebny Ustav) Moskva, Czechoslovak State Spa (Cs. St. Lazni), Karlovy Vary, Head (Vedouci) Dr P. SOLC; Institute of Hygiene (Ustav Hygieny), Prague, Director (Reditel) Prof Dr K. SYMON.

"Different Tolorance of Cow's Milk and Its Manifestations in Gastrointestinal Diseases."

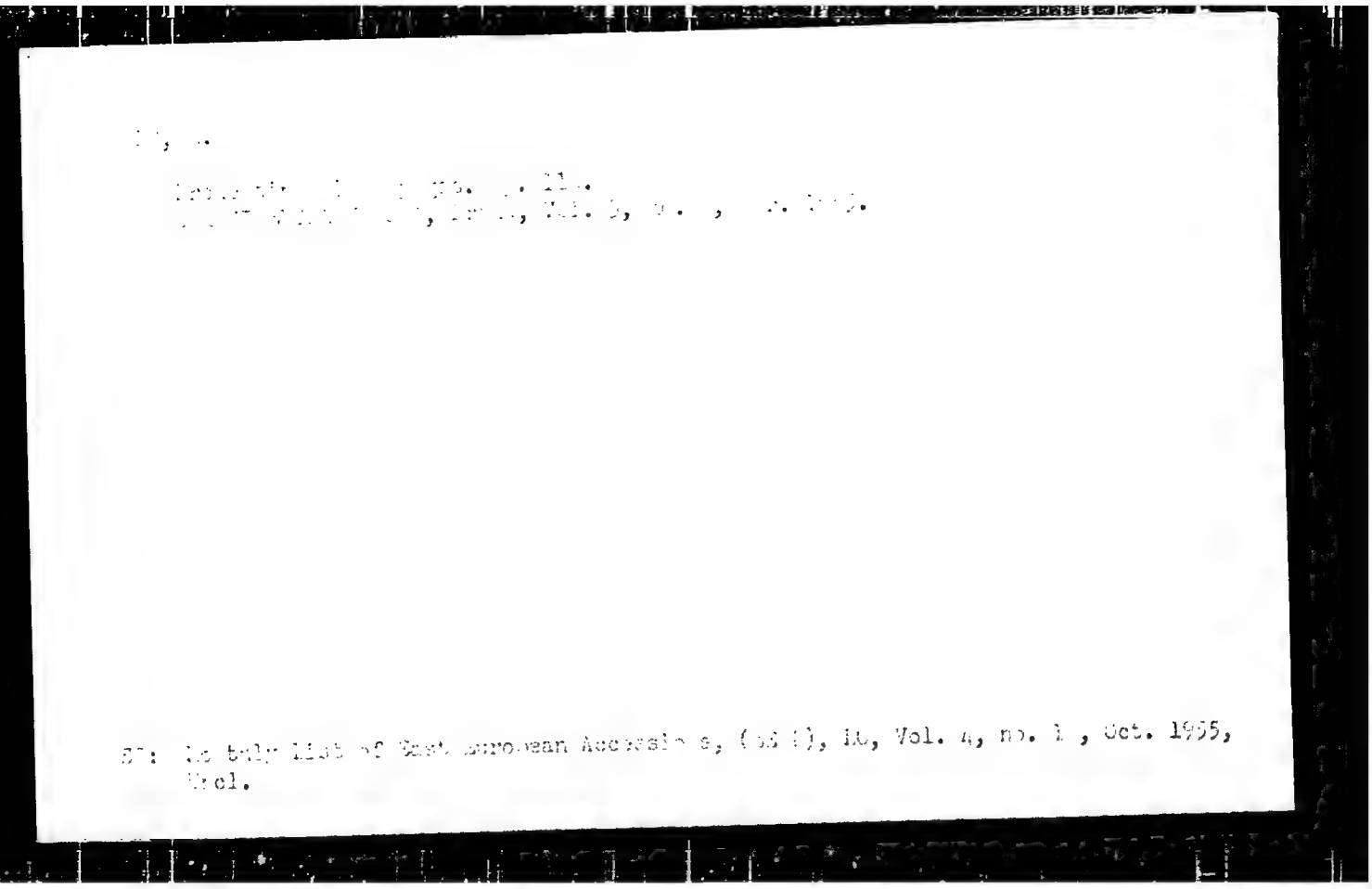
Prague, Casopis Lekaru Ceskych, Vol 105, No 34, 26 Aug 66, pp 915 - 921

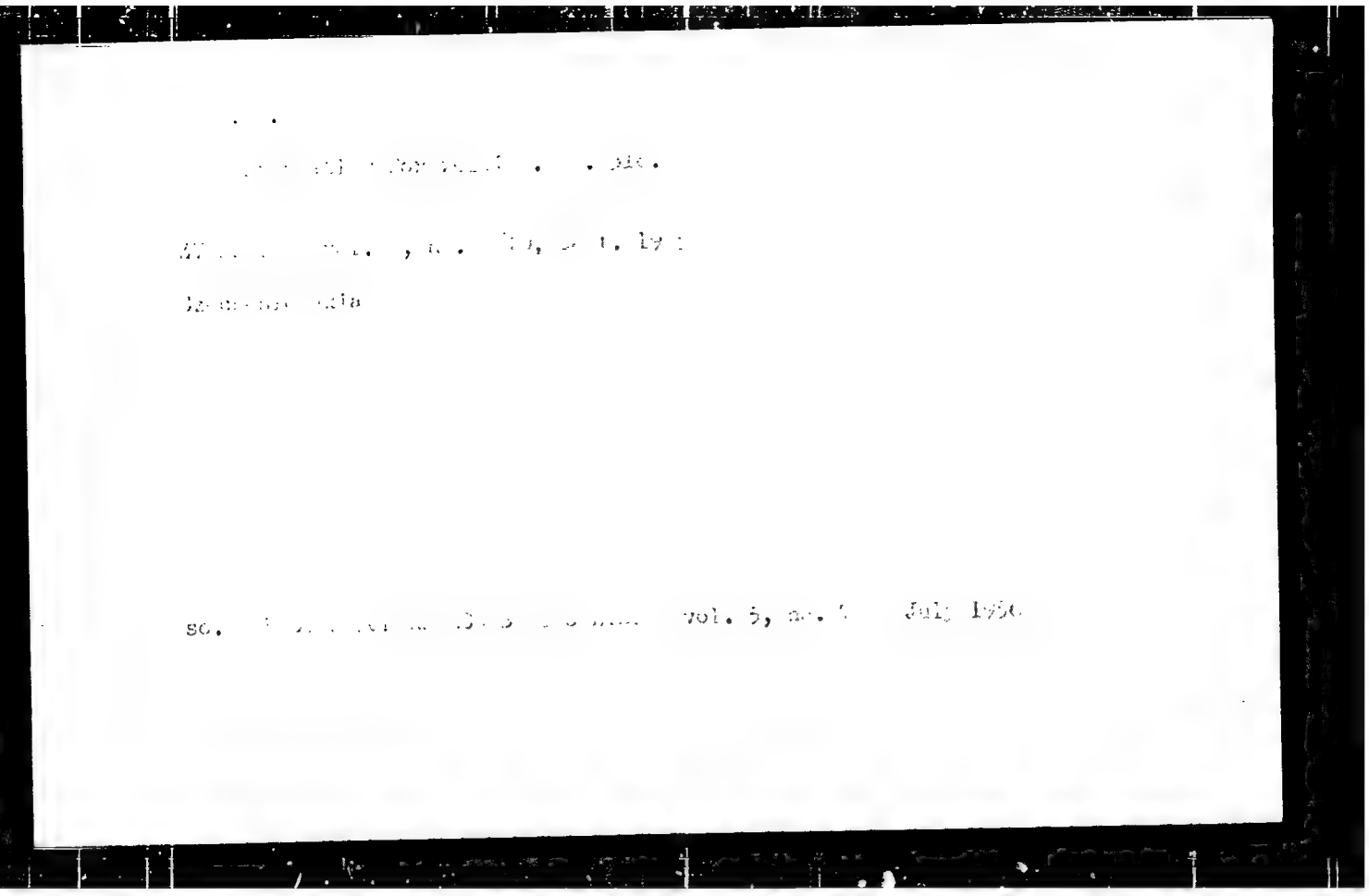
Abstract [Authors' English summary modified]: Divisions of patients into different groups according to their tolerance of fresh and sour milk is discussed. Relation between the intolerance of fresh milk, patient's bitter regurgitation, and diarrhea tendency is described. Sour milk causes diarhea, but not regurgitation. 3 Figures, 3 Tables, 6 Western, 4 Czech references. (Manuscript received Nov 65).

SOLC, R.

"Use of Methane Burners in the Machine Industry." p. 391, Praha, Vol. 4, no. 5, May 1954.

SO: East European Accessions List, Vol. 3, No. 9, September 1954, Lib. of Congress





SOLC, K.; KARLIK, K.

SOLC, K.; KARLIK, K. Experiences with resistance welding of pipes.
p. 206.

Vol. 4, No. 5, May 1956.
STROJIRENSKA VYROBA.
TECHNOLOGY
Praha, Czechoslovakia

So: East European Accession, Vol. 6, No.3, March 1957

SOLC, M.

Cleaning pipe ends.

P.21?, (Strojirenska Vyroba) Vol. 5, no. 7, July, 1957, Praha, Czechoslovakia

SO: Monthly Index of East European Accessions (EEAI) Vol. 6, No. 11 November 1957

SOLC, R.

"Flux cleaning equipment." p. 116.

ZVARANIE. (Ministerstvo hutneho prumyslu a rudnych bani a Ministerstvo strojarenstva). Bratislava, Czechoslovakia, Vol. 8, No. 4, Apr. 1959.

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 8, August 1959.
Uncla.

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E192/E382

9.6000

AUTHOR: Šolc, Radomil, Engineer

TITLE: Transistor tester TESLA BM 372

PERIODICAL: Sdělovací technika, no. 11, 1962, 439 - 440

TEXT: This simple equipment permits measurement of the current gain α_E of transistors in common-emitter connection and the zero collector current I_{kOB} in common-base connection. The principal circuit is illustrated in Fig. 1, where an AC input signal is applied through a large resistance R_1 and the amplified signal is rectified at the output of the current transformer. The output current measured by the meter is directly proportional to α_E if the input current is constant; The meter can therefore be directly calibrated in units of α_E. The zero collector current is measured with the base grounded and the emitter open-circuited. The ranges for α_E are 0 - 100 and 0 - 500, while the two ranges for I_{kOb} are 0 - 100 μA and 0 - 500 μA. The

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SOLC, Radomil, inz.

Apparatus for measuring the h-parameters of transistors. Sdel tech 10 no.12:477-479 D '62.

SOLC, V.

Transportation of fish on rafts.

p. 88 (CESKY LID) Vol. 43, no. 2, 1956,
Praha, Czechoslovakia

SO: Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 3,
March 1958

SOLC, V.

3

621.317.726 : 621.3.018.756

5047. Pulse voltmeters. Z. SOUPAL AND V. SOLC. *Slaboproudý Obzor*, 15, No. 1, 30-8 (1954) [illegible]

The voltmeter is designed to measure periodic pulse trains and h.f. pulse-modulated waveforms having repetition frequencies >100 c/s and amplitudes up to 1·2 V, the pulses being >0·1 μsec. It consists of a rectifying diode and a bridge-connected cathode follower having an input resistance of 45 MΩ. It is shown analytically that the instrument's error is $\propto TR_i/\tau R_o$, where T is the period of the waveform, τ is the pulse length and R_i and R_o are the diode internal resistance and its load, respectively. The error increases in the case of an h.f. pulse-modulated waveform. The accuracy of the instrument can be improved by employing an error-compensating circuit, which consists of two rectifying diodes separated by an amplifier. The performance of the voltmeter as a function of various variable parameters is illustrated by a number of theoretical and experimental curves.

B. S. RIDOROWICZ

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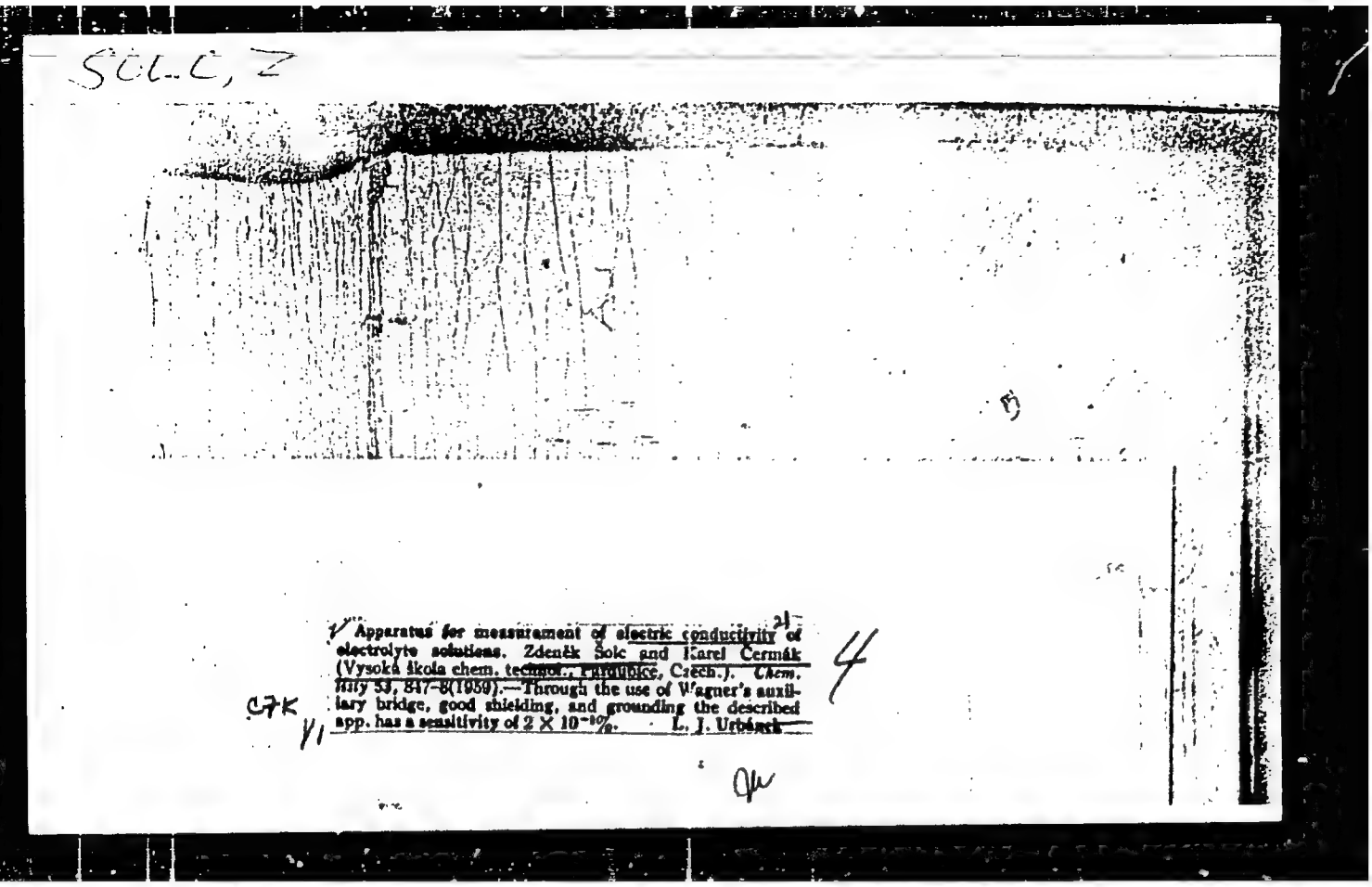

SOLC, Z

Apparatus for measurement of electric conductivity of electrolyte solutions. Zdeněk Šolc and Karel Čermák (Vysoká škola chem. technol., Pardubice, Czech.). *Chem. listy* 53, 847–8(1959).—Through the use of Wagner's auxiliary bridge, good shielding, and grounding the described app. has a sensitivity of 2×10^{-4}%. L. J. Urbánek

ŠOLC, Z.

4
JAÚ (NB)

Applications of Toepler's method to the study of the crystallization diagrams in ternary systems; the completion of the diagram in the system K_2O–P_2O_5–H_2O. J. Mýl and Z. Šolc (Vysoká škola chem.-technol., Pardubice, Czech.). *Collection Czechoslov. Chem. Communs.* 25, 2414–18(1960) (in German).—The modification of the Toepler method for detg. the soly. of solids in liquids described previously (*CA* 54, 16117*d*) is applied to the study of ternary systems. From the expt. detd. satn. temps. the equil. isotherms can be constructed. As an illustration the ternary diagram K_2O–P_2O_5–H_2O is completed at temps. from 25 up to 50°.
B. Erdős

CERMAK, K.; SOLC, Zdenek

A simple device for measuring the thickness of thin films. Jemna mech opt 6 no.11:344 N '61.

1. Vysoka skola chemicko-technologicka, Pardubice.

L 43580-65 EWT(1)/EWT(m)/EPF(c)/EWP(j)/T/EWP(t)/EEC(b)-2/EWP(b)/EWA(c)
Pc-4/Pr-4/Pi-4 IJP(c) JD/GG/RM

ACCESSION NR: AT5009582 Z/0000/62/000/000/0155/0157

AUTHOR: Kvapil, J. (Kvapil, Y.); Solc, Z. (Sholts, Z.)

TITLE: Growing single crystals of triglycine sulfate

SOURCE: Konference o monokrystalech. 4th, Turnov, 1961. Sbornik referatov. Turnov, VUM, 1962, 155-157

TOPIC TAGS: triglycine sulfate crystal, crystal growth, single crystal

ABSTRACT: After reviewing previous work on the composition of the triglycine sulfate solutions from which TGS crystals are grown, the present authors analyze the proportion of sulfuric acid to glycine in such solutions and find that this need not be exactly 1:3. They proved that TGS crystals grow in solutions varying in proportion from 1:2.5 to 1:3.5. They also studied the effect of heat on crystal growth and found that overheating stabilizes the saturation point, after which gradual cooling produces the first crystals at the lower boundary of the metastable zone. An electronic source of time impulses was used to establish the saturation point and to control the cooling rate. The many factors involved in crystal growth are described, including saturation temperature, overheating temperature and period, cooling rate, mechanical factors such as size and speed of mixing paddles, and the several types of diffusion in the solutions used. In growing TGS crystals, it is

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best to employ core rods 7 cm long, cut with a thread saw along their longitudinal axis, with pinacoidal areas on their surface to produce somewhat cloudy crystals. Solutions employed had saturation points at 45-50C, which produced crystals weighing 450 grams as they cooled under automatic control in 3-liter crystallizers. Under precise schedules of declining temperature for each successive day, crystals with a density of 1.68 grew at a rate of 0.2 cm in diameter per day. Orig. art. has: 5 figures and 5 tables.

ASSOCIATION: VUM, Turnov; VSCHT, Pardubice

SUBMITTED: 00 ENCL: 00 SUB CODE: OC, SS

NO REF SOV: 003 OTHER: 015

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MYL, Jiri; SOLC, Zdenek; KVAPIL, Josef

Crystallization parameters of technically important salts. Sbor VSChT Pardubice no.1:89-96 '63.

1. Chair of Inorganic Technology, Higher School of Chemical Technology, Pardubice, and Research Institute of Minerals, Turnov.